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ABSTRACT

Current technology provides many new ideas and alternatives to traditional education and training practices. From the experience of the U.S. Air Force (USAF) Academic Instructor School (AIS) and current research in the field, teaching via interactive television (teleseminar/video teletraining) requires new teaching skills and new ways of thinking about the classroom. This paper briefly identifies and discusses some of the instructor skills that have been identified by the AIS as critical to the success of its Interactive Television (ITV) educational or training broadcasts. The paper begins by providing background on distance learning including the USAF definition of distance learning: "Distance learning is structured learning that takes place without the physical presence of the instructor." The affective component of distance learning is then discussed. Highlights include: the relationship between attitudes and behaviors displayed by an instructor and attitudes and classroom behaviors of students; adjectives used by students to describe a teacher's most outstanding quality; selection of instructors for distance learning delivery via interactive television; and maintaining student interest. Communication skills are considered, including clarity of speech, enunciation, grammar, vocabulary, questioning skills, non-verbal communication, and listening skills. (Author/DLS)

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Putting Interaction Into Interactive Television

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Abstract

Current technology provides many new ideas and alternatives to traditional education and training practices. From the experience of the USAF Academic Instructor School (The Teachers' College of the Air Force) and current research in the field, teaching via interactive television (teleseminar/video teletraining) requires new teaching skills and new ways of thinking about the classroom. This paper will briefly identify and discuss some the instructor skills which have been identified by the Academic Instructor School as critical to the success of its Interactive Television (ITV) educational or training broadcasts.

Introduction

"The key to success in distance learning is the teacher. If the teacher on the system is good, the technology can become almost transparent. No technology can overcome poor teaching which is almost exacerbated in distance learning application."

—Congress of the United States
Office of Technology Assessment

In the late 1980's, the Office of Technology Assessment (OTA) was tasked by the Senate Committee on Labor and Human Resources, under the auspices of the House Committee on Education and Labor, to do an in-depth study of distance learning. As a part of this study, OTA analyzed various technological options, examined current developments, and looked at their effectiveness from a variety of perspectives. The result of this major tasking was the publication in November 1989 of a report, *Linking for Learning; A New Course for Education*. Along with numerous examples of a wide variety of highly successful distance learning programs in all levels of education, a frequent theme found in the report is the importance of a faculty well trained in the application of today's technology.

From the experience of the Academic Instructor School and supported by continuing research, it appears that teaching by television requires unique skills that go beyond traditional classroom teaching methods and styles. This paper/presentation will look at the AIS experience and some of its early findings.

Putting Interaction Into Interactive Television

Defining Distance Learning

Throughout the literature for distance learning there are many definitions and discussions within the field as to how it should be defined. The USAF has adopted a definition that was developed and used at a distance learning conference held in Los Alamos, New Mexico in October 1989. This conference was attended by a wide range of educators, members of the military, representatives from the Department of Defense as well as representatives from

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industry. The definition agreed upon was: "Distance learning is structured learning that takes place without the physical presence of the instructor."

By this definition almost everyone has been involved in distance learning of various types for much of their life. The military has been using correspondence courses for years; which are, in fact by this definition, a form distance learning. Much of the training provided to the military during World War II was through films and correspondence. Records show that correspondence courses have been used in America to teach others as early as the late 1700s. Many of us learn extensively from commercial television. The Public Broadcasting System (PBS) is recognized by many as an educational channel. The Mind Extension University (MEU) was developed specifically to provide learning via distance through television. Other commercial television channels, such as The Discovery Channel and The Arts and Entertainment Network, just to name a few, have taught us very successfully via distance learning for a number of years. The point is that distance learning is *not* new and most of us have been exposed to it. Currently, distance learning educational programs from grade school through college level masters degree programs are flourishing very effectively throughout hundreds of institutions in our country. These programs include a wide range of distance learning media from traditional paper-based courses through interactive computer courses, including multimedia CD-ROM, and a variety of interactive television technologies.

At this point, it is critical for potential instructors to recognize that distance learning is not new but an expansion of an old idea, using new technology. Along with using this new technology comes the requirements for new skills that must be learned to be effective. The idea of the effectiveness of distance learning can also be shown by drawing on the wealth of research available which identifies effective programs throughout industry, DoD, and educational institutions from around the country. A prime source to start with is the Office of Technology Report, *Linking for Learning*, or the National Technology University, a nonprofit institution which offers undergraduate and graduate level courses taught by the faculty of over 40 major leading universities throughout the United States. A few examples of distance learning in industry might be the extremely successful program offered by Ford Motor company to their employees through an agreement with Wayne State University in Michigan, or the model distance training program implemented by the Prudential Insurance Company. In order for potential instructors to be effective they must be convinced of the viability of the medium.

The Affective Component of Distance Learning

In any classroom situation there is a strong relationship between attitudes and behaviors displayed by an instructor and attitudes and classroom behaviors of students. Since the late 1950s, a group of educational psychologists have said that we learn through three primary areas, or domains: the cognitive or thinking and intellectual processes; the psychomotor, or by doing; and the affective, or our feelings and attitudes. The last educational hour in all of the AIS courses is called, "The Requisites of a Competent Instructor." During this hour, students are asked to reflect on all the educators or teachers they have had and to remember one or more of those who stand out as "the best teacher I had," and find an adjective they would use to describe that teacher's most outstanding quality. Having done this for over nine years at AIS, involving over 900 individual students, I have compiled a list of 33 terms that have most often been identified. Inevitably, 80 percent of the terms identified by students are either purely affective, (reflect a positive instructor attitude), or strongly

affective with a slight cognitive (intellectual) component (*). Below is a listing of the 15 most common terms and the general order in which they are identified with the primarily cognitive terms identified. Rarely does "content knowledge" or "communication skills," which are primarily cognitive, appear in the first items identified by students. My results are consistent with the results of other AIS faculty members for this exercise.

Sincere	Sense of Humor	Prepared
Enthusiastic	Flexible	Dedicated
* Effective Communicator	Professional	Good Listener
Care & Concern	Objective	Confident
* Content Knowledge	Approachable	Friendly

What this would appear to indicate very strongly is that most students apparently look for a number of portrayed attitudes by instructors that are at least as important, if not more important, than just content expertise. (These results do not in any way dismiss the instructor need for content knowledge and expertise.) One of the strong arguments as to why distance learning cannot be effective is the lack of observable one-on-one student-teacher classroom relationships that are established, plus the inability to observe student nonverbal cues. Although some of those things are not available via television, there are a number of affective or attitudinal behaviors that can be portrayed through the medium that will encourage and aid in the student affective component of the learning process. In order for instructor/student or student/student interaction to be effective, the instructor needs to be aware of and develop those skills that create that positive affective atmosphere.

This brings up another consideration that is directly related to the affective component of learning, that is the selection of the instructor for distance learning delivery via interactive television. Not all teachers want to or can deliver lessons via television. It might be a real case of stage fright (camera shy), a personality issue, or a person who just cannot make the adjustment to some of the limitations teleteaching imposes. The current literature cites cases where institutions have conducted faculty screen tests or auditions before making their selection for distance learning instructors. The Air National Guard Professional Military Education Center in Knoxville, Tennessee, is currently delivering one of their Enlisted Military Education Courses via distance learning. As part of their early planning and preparation, they had their faculty members go through a screen test to aid in deciding who the distance learning instructors would be. The role the affective component plays in distance learning instructor skills cannot be over emphasized.

Many of us have experienced the traditional classroom in which the instructor teaches by a relatively formal lecture and with little or no student interaction. In these settings many of us, even when interested, have found it difficult to enjoy and be a part of the learning process. Imagine that same scenario as we sit miles away from the instructor while watching a TV set and listening to a "talking head." Maintaining student interest becomes an even more difficult challenge in distance learning than in the live classroom setting. Have you noticed how much variety, changes in camera angles, and use of video clips are involved in a nightly network newscast? Much of this is done to maintain viewer interest. In most major network broadcasts there is some sort of action or change every 10-to-15 seconds.

Maintaining student interest obviously creates a real challenge for the interactive television instructor. As we worked with instructors, we put a great deal of emphasis on improving their ability to ask frequent, in-depth questions and foster interactive discussions within the distance classroom. If the distance learning model is only to provide a formal lecture, then making a videotape and sending it to the students is much more cost effective and serves the same purpose. AIS faculty have been successful in presenting a variety of teaching methods via interactive television for distance learning. Some of the methods which have been taught successfully are: Teaching Interview, Case Study, Group Discussion, as well as extended Informal Lecture. The key to the success of these various methods has been the instructor's extensive knowledge and understanding of the affective component of interactive television as well as a highly developed skill in utilizing effective questioning and student probing techniques. Variety, interaction, and involvement are directly related to the affective component of the learning process. Also critical are communication skills.

Communication Skills

Certainly, in any classroom environment the instructor's communication skills are important. However, as rapport is established individually and collectively with a live class, there are often some minor things that happen during the lesson that can be overlooked or joked about. However, distance learning students are usually far more critical and television is far less forgiving of even small mistakes.

Clarity of speech and enunciation are far more important in a distant learning scenario than in a live classroom. During a resident class the instructor's voice may tail off at times but it is still audible in the classroom and the students will adjust and frequently accept it. However, when broadcasting this becomes far more pronounced and the students may find it very distracting. Also, related to this are verbal pauses that may be an unconscious habit of an instructor and overlooked in a live classroom. Such things as: *uh, um, you know, o.k.*, and other unconscious sounds easily become major distractors via television. Grammar and vocabulary are other critical elements when broadcasting that are not as critical in the live classroom. That is not to say these things aren't important in a residence course but they do become magnified for distance learning students. In addition to variety, interaction, and involvement, which we previously talked about, improved questioning skills and techniques are critical in the distance learning environment. It is important to ask clear questions that require substance and thought when students respond. One of the most difficult tasks for any instructor to learn is to allow silence to occur after asking a question. In our culture it appears that silence during a conversation is threatening and we feel a need to fill this void. Instructors must learn to wait and allow students time to hear the question, interpret it, formulate an answer, and be willing to provide that answer to a television monitor. If the instructor continually jumps in with the answer, the students will come to expect that and not make any effort to respond. These concerns are just a few of the issues surrounding effective verbal communication skills needed in an effective distance learning environment.

Non-verbal communication takes on an even more significant meaning as it relates to interaction and interactive television. Probably the most important of all of the non-verbal behaviors is eye contact. It is important for instructors to learn to talk *with* the camera and maintain direct eye contact. This is the most important connection between the presenter and the distance students. Whether presenting from a live classroom or a studio there are many distractors that make it easy for a presenter to forget and to ignore the camera. On

occasion, presenters have found that putting such things as a wig or a favorite teddy bear on top of the camera has helped their focus in this crucial area. Facial expressions of the presenter are very clear to the distance students and any looks of disdain or disgust when responding to a student's question or reply are magnified and quickly impact on the presenter's rapport and credibility. However, a smile or facial expression of interest or concern go a long way in maintaining student interest.

As mentioned earlier, movement of the instructor is an important part of non-verbal communication. Excessive movement is also a distractor when using television.

Although the director is responsible for the camera angles and shots, the presenter must be aware of limitations when working with television. Gestures are magnified, wiping the face (particularly around the nose) is greatly exaggerated and sends a distracting message to the distance students. Hand gestures frequently used in a normal classroom setting may need to be modified on camera. Pushing one's eyeglasses up with the middle finger may be an incidental unconscious habit of convenience, but during a close-up camera shot it may take on a whole new negative connotation. One final concern of communication is the presenter's listening skills. All too often we hear what we want to hear and spend little time developing active listening skills. With a wide range of distractions, whether in a live classroom or a studio setting, unless a conscious effort is made to listen attentively it is easy to miss or misunderstand a student response or question. Students expect us to be as attentive to them as we want them to be to us. This is particularly true in distance learning and requires extra effort on the part of the instructor. For many, becoming consciously aware of the impact our overall communication skills have on the distance learning classroom may be difficult because of our long-term habits as instructors.

Conclusions

The current distance learning research strongly supports the effectiveness of interactive television as a medium for distance learning. At the same time, it also indicates that the role and skills of the instructor are critical to that effectiveness. Delivering distance learning via interactive television does not just happen and is not the same as teaching in the traditional resident classroom. Although educators have long been aware of the importance of the affective domain in the classroom, it appears to take on an even more crucial role in successful distance learning. Being aware of and understanding the components of the affective domain as it impacts interactive television is crucial to the successful distance learning instructor. Putting interaction into interactive television doesn't just happen but must be understood and planned for by the successful teleseminar instructor. *"No technology can overcome poor teaching which is almost exacerbated in distance learning application."*

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Autobiographical Sketch

Tom Wolfe is Chair, Instructional Methods and Technology Department at the USAF Academic Instructor School (AIS), "The Teacher's College of the Air Force." He has been teaching throughout USAF Professional Military Education (PME) programs since 1968. He joined the faculty of AIS in 1985 and has served as Evaluation Branch Chief, Assistant Dean of Curriculum, and Chair, Performance Technology Department prior to his current position. He has been heavily involved in Distance Learning since 1993 and has written numerous papers relating to his specialty, Instructor Preparation for Distance Learning.

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